

# CARRIER FREQUENCY OFFSET ESTIMATION IN PREAMBLED SYSTEMS

## Abstract

A device and method for improving carrier frequency offset estimation in any in constant-period DSSS system in the presence of multipath channels and thermal noise. The method includes first determining the main-cursor path from the matched code output utilizing peak detection. The main-cursor signal is then multiplied by a delayed conjugated version of the main-cursor signal. The carrier frequency offset can then be estimated from the result of the multiplication according to predefined formulas. A device capable of carrier frequency offset estimation includes control circuitry and a transceiver. The control circuitry includes a CPU and a memory. The memory includes program code utilized to implement carrier offset estimation according to the claimed invention.